

BEFORE THE DELAWARE PUBLIC SERVICE COMMISSION

IN RE: IN THE MATTER OF THE APPLICATION )  
OF DELAWARE DIVISION OF CHESAPEAKE )  
UTILITIES CORPORATION FOR A GENERAL ) PSC DOCKET NO. 07-  
INCREASE IN NATURAL GAS RATES AND CHARGES )  
THROUGHOUT DELAWARE AND FOR APPROVAL OF )  
OTHER CHANGES TO ITS TARIFF )

DIRECT TESTIMONY OF JEFF HOUSEHOLDER

On Behalf of Chesapeake Utilities Corporation  
Delaware Division

Submitted for filing: July 6, 2007

**Revenue Normalization Mechanism**

**Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED REVENUE NORMALIZATION MECHANISM.**

A. The Company is proposing to adopt a revenue normalization mechanism similar to the mechanism Chesapeake currently has in place in its Maryland Division. The proposed Delaware mechanism would "decouple" the recovery of the Commission-approved revenue requirement for a given rate class from the variable gas usage of the consumers in the class. In a rate proceeding such as this one, a revenue requirement for each rate class would be determined. The approved revenue requirement by class would reflect revenues generated by a forecast level of consumers, at assumed gas usage levels. The Company's forecast includes estimated usage levels under conditions of normal weather. Once the Commission has approved the Company's annual average revenue requirement by class, equivalent normalized monthly base revenues per consumer can be determined. A monthly base revenue amount per Consumer would be calculated based on the proportional difference in monthly revenue compared to total revenue from the applicable rate classes in the Test Period, as approved by the Commission. Any difference (either positive or negative) between the actual Gas Delivery Service revenue received in a month per consumer and the normalized monthly base revenue requirement per consumer would be multiplied by the number of active consumers in such month. The resulting amount (positive or negative) would be accrued by the Company each month. At the beginning of each calendar quarter the Gas Delivery Service rate

1 in each applicable Rate Schedule would be increased or decreased by an  
2 amount calculated to recover or refund shortfalls or surpluses in the Company's  
3 approved normalized revenue requirement from the prior quarter.

4 **Q. IS THE COMPANY PROPOSING TO APPLY THE REVENUE**  
5 **NORMALIZATION MECHANISM TO ALL RATE CLASSES?**

6 A. No. The Company would not apply the normalization mechanism to the GS-7,  
7 FTS-7 or ITS rate classes. The Company's rate design for these large volume  
8 classes (>100,000 Ccf per year) include a Demand Charge which would increase  
9 the recovery of fixed costs through a fixed charge. The Company proposes that  
10 all RS classes, the GS-1 through GS-6 classes and the FTS-1 through FTS-6  
11 classes only would be subject to the revenue normalization billing adjustment.

12 **Q. WHAT FACTORS ARE INFLUENCING THE COMPANY TO PROPOSE**  
13 **DECOUPLING ITS REVENUE RECOVERY FROM ACTUAL GAS USAGE?**

14 A. Over the past twenty-five years, the natural gas industry in the United States has  
15 experienced a significant growth in customers and a concurrent significant  
16 reduction in gas consumed per customer, especially in the residential market.  
17 According to an American Gas Association (AGA) study, today's average  
18 American home uses 25% less natural gas than in 1980. The Company's  
19 experience in its Delaware system is similar to the national trend. The Company  
20 is recording steady declines in usage per consumer, especially among mid-  
21 volume commercial and residential consumers. These reductions in usage are  
22 the result of several factors. Increases in the efficiency of appliances and  
23 improvements in building construction standards have been key contributors. In

1 addition, the general increase and volatility in fuel prices in this decade has given  
2 consumers incentive to reduce their energy use. Information compiled by AGA  
3 indicates that homeowner conservation efforts have accelerated. Over the past  
4 five years, homeowners have reduced gas consumption even more than the 1%  
5 per year trend experienced over the previous twenty years. Similar trends have  
6 been seen in non-residential markets.

7 **Q. IT WOULD APPEAR THAT INCREASED ENERGY CONSERVATION BY**  
8 **CONSUMERS IS GOOD FOR THE CONSUMER AND A POSITIVE STEP FOR**  
9 **THE COUNTRY. WHY IS THAT A CONCERN FOR THE COMPANY?**

10 A. The answer to the previous question presents a credible and quantifiable  
11 example of sustained energy reduction through consumer conservation and  
12 demand-side management efforts. Improving the physical energy efficiency of  
13 buildings and conserving energy through changes in the habits of the building  
14 occupants benefit consumers through lower bills, and offers measurable  
15 environmental benefits. Given the current global energy situation, and the  
16 country's dependence on foreign energy imports, it would appear that an  
17 accelerated conservation effort would be in the interest of all parties. However,  
18 under the traditional LDC rate designs in effect for virtually all gas companies,  
19 including the Company's Delaware division, in which the recovery of operating  
20 costs are directly tied to the amount of gas used by consumers, the LDC can be  
21 significantly disadvantaged.

22 As noted in the rate design section of my testimony, virtually all costs  
23 associated with operating a gas utility are fixed, that is the costs do not change

1 as the volume of gas used by consumers goes up or down. The Company  
2 recovers its costs, including a return on its investments, by charging for the  
3 “delivery” of gas over its pipeline distribution system. The only significant variable  
4 cost for the Company is its gas supply commodity cost. That cost is passed  
5 through to consumers through the existing GSR mechanism with no mark-up by  
6 the Company. Notwithstanding the current rate design for sales to interruptible  
7 consumers, which the Company is proposing to change, gas supply commodity  
8 revenues do not contribute to the recovery of the Company’s fixed operating  
9 costs. As consumers continue to migrate to transportation service and purchase  
10 their gas from third party suppliers, the Company’s “variable” costs will continue  
11 to decline.

12 Under traditional rate design practice, the annual cost to provide delivery  
13 service to consumers is divided into the estimated volume of gas for each  
14 customer class forecast to be delivered in the same year. If the Company  
15 delivers more or less gas than forecast, it will (other factors being equal) either  
16 over-recover or under-recover its projected costs. In the event consumers use  
17 less gas than forecast due to conservation, the LDCs profits suffer, since the  
18 recovery of fixed costs through variable rates is reduced proportionately to the  
19 reduction in consumption. The conservation efforts of consumers prevent the  
20 LDC from recovering its authorized costs and earning its allowed return. Under  
21 such a rate design, energy efficiency and conservation by consumers, while good  
22 for the consumer and society as a whole, are not compatible with the Company’s  
23 shareholder interests. Decoupling mechanisms break the link between revenue

1 and consumer consumption, and help re-position the LDC to take an active role  
2 in the support of conservation efforts without negatively impacting its returns.

3 **Q. ARE THERE DECOUPLING MECHANISMS OR OTHER RATE DESIGN**  
4 **APPROACHES THAT ACCOMPLISH THE SAME OBJECTIVE AS A**  
5 **REVENUE NORMALIZATION MECHANISM?**

6 A. Over the past several years, several utility regulatory commissions have been  
7 increasingly receptive to exploring rate designs and cost recovery mechanisms  
8 that move away from the recovery of fixed system operating costs from  
9 volumetric rates. Various LDCs have implemented, for example, greater relative  
10 increases in fixed monthly Customer Charge rates than in volumetric rates,  
11 instituted fixed rate demand charges and allocated costs on a fixed basis to third  
12 party gas marketers. The declining rate blocks in the Company's current tariff are  
13 an example of a rate design that mitigates, to some extent, the effects of reduced  
14 consumption on revenue recovery. Around the country, LDCs, with regulatory  
15 approval, have implemented rate designs or recovery mechanisms that further  
16 break, or decouple, the link between fixed cost recovery and the quantity of gas  
17 delivered to consumers. Among these are:

- 18 • Straight-Fixed Variable (SFV) Rate Design: Used extensively by FERC for  
19 interstate pipeline rate design, SFV rates recover the predominant fixed  
20 costs through fixed reservation or demand charges and the lesser variable  
21 costs, if any, through a volumetric charge. LDCs in Georgia, North Dakota  
22 and Oklahoma current operate under a SFV-type rate design.

- 1       • Fixed Delivery Service Charge: All costs are recovered from a fixed  
2       monthly charge. Atmos Energy's Missouri division recently implemented a  
3       fixed charge mechanism for certain small volume rate classes.
- 4       • Weather Normalization Mechanism (WNM): A tracking mechanism where  
5       actual delivered gas volumes are adjusted to weather-normalized volumes  
6       (usually as approved in the last rate case) and revenues are adjusted by  
7       applying existing margin rates to the adjusted volume. LDCs in numerous  
8       states have implemented weather normalization mechanisms.
- 9       • Revenue Normalization Mechanism (RNM): A tracking mechanism where  
10      actual revenues are adjusted for a given period to account for over or  
11      under recovery of the weather normalized revenues approved by rate  
12      class in a rate proceeding. Revenue adjustments can be made based on  
13      changes in the average use per customer or on variations in the forecast  
14      margins per customer compared to base case margins, usually by  
15      customer class. The RNM accounts for factors other than weather, such  
16      as conservation, economic factors, etc. As noted above, the Company has  
17      such a mechanism in place in its Maryland Division for residential and  
18      small volume commercial consumers. Baltimore Gas and Electric and  
19      Washington Gas Light are other LDCs in the region that have  
20      implemented RNM programs in Maryland. Additionally, the states of  
21      Washington, Oregon, California, Utah, Missouri, Indianan, Ohio and North  
22      Carolina have adopted some form of revenue decoupling.

- Rate Stabilization Mechanism (RSM): A tracking mechanism that enables a utility to adjust rates, without a full rate case filing, in the event an approved earnings target is not achieved (or is exceeded). Rate stabilization mechanisms are currently in place for LDCs operating in South Carolina, Alabama, Mississippi, Louisiana, Oklahoma and Texas.

**Q. HOW WIDESPREAD IS REVENUE DECOUPLING AMONG U.S. GAS UTILITIES?**

A. At present, according to the April 2007 AGA Rate Round-up publication, seventeen (17) LDCs in ten (10) states have implemented some form of revenue decoupling or revenue normalization mechanism and ten (10) additional states, plus the District of Columbia, have programs pending before regulatory commissions, including the Delaware Commission. In addition, utilities in six states have approved Rate Stabilization Programs in place. While the interest in revenue decoupling among utilities, conservation and environmental groups and regulators has been at a high level over the past few years, revenue decoupling is not a new concept. In California, for example, decoupling mechanisms have been in place for over thirty (30) years.

**Q. WHY HAS THE COMPANY PROPOSED A REVENUE NORMALIZATION MECHANISM AND NOT ONE OF THE OTHER MECHANISMS LISTED ABOVE?**

A. Regardless of the methodological process adopted, revenue decoupling seeks to ensure the recovery of a LDCs fixed costs regardless of weather conditions or conservation actions. The SFV and fixed delivery charge methods obviously



1 reduce or eliminate the level of cost recovery dependent on variable rate  
2 components. The adjustment mechanisms, in one form or another, adjust the  
3 actual delivered gas volumes to match the weather-normalized gas volumes  
4 used to forecast revenues in the LDCs most recent rate proceeding. When there  
5 is a deviation in the forecast volume, the mechanism adjusts the delivery charge.

6 The Company has proposed a Revenue Normalization Mechanism  
7 primarily because it is a simple, straight-forward and easily administered process.  
8 The weather normalization calculations are performed during the rate proceeding  
9 and are not necessary for each adjustment of revenue. The procedure is readily  
10 understood by the Company's consumer service employees and is relatively  
11 easy to explain to consumers, as opposed to the WNM or RSM process. The  
12 RNM proposed by the Company would adjust revenues on a quarterly basis. It  
13 would have the effect of "smoothing out" a consumer bill, so the peaks and  
14 valleys associated with weather related variable rate delivery charges is  
15 mitigated. The RNM does not require a significant departure from the rate design  
16 or regulatory review process that has been in place for decades, and the basic  
17 mechanics of rate making remain unchanged. Finally, the Company opted to  
18 propose a RNM because it has such a mechanism in place in its Maryland  
19 Division. The administrative procedures in Delaware would be virtually identical  
20 those already developed for Maryland. The primary Customer Information  
21 System modifications have already been accomplished and the consumer  
22 service employees are trained on the procedures.

23 **Q. HAS THE MARYLAND RNM BEEN SUCCESSFUL?**

1 A. The Company's Maryland RNM program went into effect in October 2006. To  
2 date, including the past winter months through March, the Company's rate  
3 adjustments resulted in a small additional net charge to consumers  
4 (approximately \$25,000). Although it is too early to empirically judge the results  
5 of the Chesapeake program, there are indications that the eight-year old  
6 Baltimore Gas and Electric (BGE) revenue decoupling program is working as  
7 intended. The April 2007 edition of *Public Utilities Fortnightly* includes an article  
8 on natural gas revenue decoupling by Ken Costello, Senior Institute Economist at  
9 the National Regulatory Research Institute at the Ohio State University. In the  
10 article, Mr. Costello, reports on conversations with staff at the Maryland Public  
11 Service Commission who indicate that the BGE program (Rider 8) has, "(1)  
12 produced more stable and predictable revenues for the utility between rate cases  
13 by accounting for revenue "attrition" from declining gas use per customer; (2)  
14 reduced the volatility of gas bills, especially under cold weather conditions; and  
15 (3) allowed for the continuation of current rate designs that provide an incentive  
16 for consumers to conserve and are non-discriminatory to low-usage customers."  
17 The article goes on to indicate that Maryland Commission staff noted that the  
18 BGE mechanism is "...easy for the utility to administer and the Commission to  
19 monitor." and that "...the mechanism has fulfilled more regulatory objectives with  
20 fewer shortcomings than other alternatives." One would expect similar results  
21 from the RNM implemented in Chesapeake's Maryland Division.

1 **Q. YOU INDICATED THAT THE RNM PROPOSED FOR DELAWARE WOULD BE**  
2 **“VIRTUALLY” IDENTICAL TO THE RNM CURRENTLY IN PLACE IN**  
3 **MARYLAND. HOW WOULD THEY DIFFER?**

4 A. The Maryland RNM adjusts consumer rates (increases or decreases) through an  
5 adjustment in the Company’s purchased gas cost rate. The rate classes in  
6 Maryland to which the RNM applies (residential and small commercial) are not  
7 eligible for transportation service, therefore adjusting the purchase gas cost to  
8 these consumers would fairly distribute the rate adjustment to the all affected  
9 consumers. In Delaware, however, the Company is proposing to expand its  
10 transportation service program to all non-residential consumers. To ensure that  
11 the RNM credits or charges apply to both sales service and transportation  
12 service consumers in the applicable rate classes, the Company is proposing a  
13 billing adjustment for each respective rate class. A RNM rider rate schedule is  
14 proposed. The consumer’s Gas Delivery Service charge would be adjusted to  
15 reflect the credit or charge determined under the RNM.

16 **Q. THE COMPANY HAS ALSO PROPOSED A RATE DESIGN THAT MOVES**  
17 **TOWARD ADOPTING SFV PRINCIPALS THROUGH INCREASED**  
18 **CUSTOMER CHARGES AND A NEW DEMAND CHARGE. IS THE RATE**  
19 **DESIGN IN CONFLICT WITH THE PROPOSED RNM?**

20 A. No. Optimally, from the Company perspective, it would recover all fixed costs  
21 from fixed charges. However, there is a general concern among some parties  
22 that fixed charge rate designs fail to send an appropriate price signal to small  
23 volume (primarily residential) consumers. The absence of such price signal, it is

1 argued, removes an incentive for consumers to engage in conservation actions.  
2 In my view this position is unwarranted since the fuel cost typically represents the  
3 majority of the total consumer's bill. In most cases, fuel costs would continue to  
4 be billed volumetrically and would send a significant price signal. Nonetheless, in  
5 this filing the Company is proposing to take a relatively small, measured step  
6 toward SFV rates through an increase in its Customer Charges and the proposed  
7 Demand Charge for large volume consumers. Under the proposed rate design  
8 the Company would recover approximately 45% of its fixed costs from the fixed  
9 charges at the increased Customer and Demand Charge levels. The RNM would  
10 fill the cost recovery gap, at least for firm service rate classes. The move toward  
11 SFV rate design through the incremental increase of fixed charge rate  
12 components (while limiting the increase of the variable component) reduces the  
13 amount of adjustment required under a RNM. The perception of consumers is an  
14 important consideration in any rate design. The Company believes that its rate  
15 design and proposed RNM offer benefits to all stakeholders. Of particular  
16 importance, the RNM would enable the Company to be an active supporter of  
17 consumer conservation efforts.

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20 **Energy Conservation Plan**  
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23 **Q. IN THE ABOVE DISCUSSION, YOU APPEAR TO LINK REVENUE**  
24 **DECOUPLING TO EXPANDED EFFORTS ON THE PART OF LDCS TO**  
25 **SUPPORT CONSUMER ENERGY CONSERVATION EFFORTS. WHY?**

1 A. Reducing energy consumption in Delaware through conservation and demand  
2 side management initiatives should be a key component in meeting the state's  
3 projected energy requirements. In a growing state like Delaware, conservation  
4 efforts alone will not be sufficient to meet projected energy needs, but developing  
5 and implementing a more aggressive and comprehensive conservation strategy  
6 could, and should, play an important role in mitigating the rate of forecast energy  
7 growth.

8         There are two primary reasons the Company has linked revenue  
9 decoupling to the support of consumer energy conservation programs. First,  
10 Company's that fail to understand and meet the expectations of their consumers  
11 are generally unsuccessful. It is clear from the AGA statistics described above,  
12 as well as the Company's experience with its own consumers, that homeowners  
13 and business owners are concerned about energy costs and are actively  
14 searching for methods to conserve. If the Company can decouple its revenues  
15 from sales volumes, it would be able to actively encourage and support actions  
16 that could have a meaningful impact on energy use and a consumer's bill. Over  
17 the long-term the Company believes that its ability to retain consumers and grow  
18 its business will be based, in large part, on its efforts to help consumers use  
19 natural gas in the most efficient way possible.

20         Second, there appears to be significant interest among numerous  
21 interested parties to directly associate revenue decoupling and other innovative  
22 rate designs with energy conservation. Several national environmental and  
23 energy efficiency groups have recognized that traditional rate designs are

1        disincentives for gas and electric utilities to support energy conservation efforts.  
2        For example, the Natural Resources Defense Council and the American Council  
3        for an Energy-Efficient Economy have issued several statements supportive of  
4        decoupling as means to enlist the LDCs support of conservation efforts. After  
5        several years of concern over declining gas usage, the financial community has  
6        also expressed an interest in revenue decoupling as a way of aligning regulatory  
7        and consumer interests with those of the LDC.

8                Most significantly, a number of state regulatory commissions have  
9        approved decoupling mechanisms with the stipulation that an LDC develop and  
10       promote substantive energy conservation programs. It would appear that linking  
11       revenue decoupling and energy conservation is a concept that has broad support  
12       across the country. The National Association of Regulatory Utility Commissioners  
13       (NARUC) adopted a resolution on *Energy Efficiency and Innovative Rate Design*  
14       in November 2005. In its resolution NARUC concluded that, "Current forms of  
15       rate design may tend to create a misalignment between the interests of natural  
16       gas utilities and their customers." NARUC went on to, "...encourage State  
17       commissions and other policy makers to review the rate designs they have  
18       previously approved to determine whether they should be reconsidered in order  
19       to implement innovative rate designs that will encourage energy conservation  
20       and energy efficiency..."

21               In April, 2007, U.S. Senators Jeff Bingaman and Pete Domenici  
22       introduced S.B. 1115. The proposed bill is primarily focused on establishing  
23       standards for appliance efficiency, energy use in government buildings and

1 reducing gasoline usage in the transportation sector. However, as an example of  
2 the increasing trend among lawmakers, environmentalists and state regulators to  
3 link conservation efforts and utility rate-structures, the proposed bill includes  
4 language urging state utility regulators to consider, “separating fixed-cost  
5 revenue recovery from the volume of transportation or sales service provided to  
6 the customer” and “adopting energy-efficiency as one of the goals of retail rate  
7 design”.

8 From the state of Delaware’s perspective, it would appear that the  
9 Company’s proposed conservation programs would also be a good fit with the  
10 conceptual structure for a Sustainable Energy Utility (SEU) as included in the  
11 recent report to the Delaware Legislature from the Sustainable Energy Utility  
12 Task Force. The report emphasizes the need to improve building energy use and  
13 promote customer-site renewable energy. One of the stated objectives of the  
14 SEU is to ...“use incentives to eliminate the cost-difference between Energy Star  
15 and conventional appliances.” The Proposed Delaware SEU Framework, as  
16 depicted in Figure 4.1 of the report, would include utilities as an integral part of  
17 the SEU’s operations and implementation functions. In general, utilities, including  
18 the Company, have long-established and well developed relationships with  
19 developers constructing new residences and commercial properties, retail  
20 appliance dealers and contractors. As noted in the SEU report, education and  
21 outreach efforts and incentive programs are among the implementation functions  
22 that could be provided by utilities. In the Company’s view, one of the most  
23 expedient and cost effective means of achieving increased energy efficiency in

1 new buildings is through implementation of utility incentive and consumer  
2 education programs. The types of programs delivered effectively by a utility,  
3 through its leveraged relationships and service nexus with the new building  
4 construction market, are appliance rebates, home energy rating programs,  
5 appliance dealer incentives and educational programs for the building industry.  
6 To the extent the Company is not financially harmed by the revenue loss  
7 resulting from such programs, it would be a strong supporter of the SEU concept  
8 for improving energy efficiency in Delaware.

9 **Q. WHAT ARE THE ENERGY CONSERVATION PROGRAMS THE COMPANY IS**  
10 **PROPOSING TO IMPLEMENT AS PART OF ITS REVENUE DECOUPLING**  
11 **PROPOSAL?**

12 A. The Company is proposing to initially adopt four energy conservation programs  
13 aimed primarily at the residential home market. Subsequent to the  
14 implementation of its residential programs, the Company would propose to work  
15 with the Delaware Energy Office (or SEU if it is operational at that time) to  
16 develop conservation programs targeted to the commercial and industrial  
17 markets.

18 1. The Company would become a sponsor of the ENERGY STAR program,  
19 a joint US Department of Environmental Protection and US Department of  
20 Energy initiative. As an ENERGY STAR partner, the Company would  
21 actively promote the ENERGY STAR brand and the high efficiency  
22 appliances and construction products rated by the DOE through its  
23 advertising and contacts with appliance dealers, contractors and builders.



1 The Company would also develop and promote an energy efficient  
2 residential new construction based on ENERGY STAR building standards.

- 3 2. The Company would implement a Residential Appliance Replacement  
4 Program to encourage homeowners in existing residences to replace and  
5 upgrade existing Gas appliances with new high efficiency Gas appliances.  
6 The Company would provide cash allowances to homeowners in the  
7 following amounts:

<u>Eligible Appliances</u>	<u>Allowance Amounts</u>
Gas Whole-House Heating	\$450
Gas Water Heating	\$350
Gas Cooking	\$100
Gas Clothes Drying	\$100

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19 3. The Company would implement a Residential New Construction Program  
20 to encourage homebuilders to install highly efficient gas appliances. If the  
21 energy efficiency level of new residential construction can be improved at  
22 the outset, it will reduce the need to upgrade standard builder model  
23 appliances and construction products at a later date.

<u>Eligible Appliances</u>	<u>Allowance Amounts</u>
Gas Whole-House Heating	\$400
Gas Water Heating	\$300
Gas Cooking	\$100
Gas Clothes Drying	\$100

1 Under both the appliance replacement and new construction programs all  
2 Gas whole-house heating systems must meet or exceed an Annual Fuel  
3 Utilization Efficiency rating of .90 AFUE. All Gas water heating systems  
4 must meet or exceed a minimum Energy Factor rating of .80 EF. All Gas  
5 cooking and clothes drying appliances must have pilotless ignition. Any  
6 whole-house heating system and water heating system receiving an  
7 allowance under the program must demonstrate compliance with the  
8 applicable efficiency standards described above as rated under the U.S.  
9 Department of Energy's Uniform Test Method for Measuring the Energy  
10 Consumption of Water Heaters, Appendix E and Furnaces, Appendix N, to  
11 Subpart B of 10 CFR Part 430, Energy and Water Conservation Standards  
12 and Effective Dates.

- 13 4. The Company would implement a Consumer Education Program in  
14 conjunction with its ENERGY STAR partnership agreement, promote  
15 energy efficiency and conservation throughout its service area through  
16 communications with Consumers, appliance retailers, contractors,  
17 homebuilders, developers and others engaged in the building industry.  
18 Such communications may include, but not be limited to, general  
19 advertising, bill stuffer's, point of purchase displays, consumer education  
20 exhibits, presentations to schools, civic and neighborhood association  
21 groups, development of branding programs tied to the ENERGY STAR  
22 partnership, and other reasonable means of communicating to consumers.

1 Consumer education and advertising would be related to an approved  
2 conservation program or ENERGY STAR initiative.

3 **Q. WHY WERE THE EFFICIENCY RATINGS FOR HEATING SYSTEMS AND**  
4 **WATER HEATING SYSTEMS SELECTED?**

5 A. The furnace efficiency minimum rating of .90 AFUE is an ENERGY STAR rating  
6 level. A .90 AFUE heating system would most likely be either a condensing  
7 furnace, hydronic system using a tankless water heater, or pulse ignition model.  
8 The .90 AFUE represents a significant improvement over the existing minimum  
9 Federal furnace standard of .78 AFUE. The incremental installed cost for an  
10 upgrade to a .90 AFUE furnace in the Company's service area ranges from  
11 approximately \$700 to \$1,000 based on a recent survey of contractors. The  
12 proposed cash allowance amounts of \$400 (new construction) and \$450  
13 (replacement) would, on average pay for approximately 50% of the upgrade in  
14 efficiency. The Company estimates that less than 10% of the gas furnaces  
15 currently installed in new homes or in the replacement market, in the Company's  
16 service area, would meet the .90 AFUE requirement.

17 The .80 EF rating is consistent with the minimum efficiency level required  
18 by the national Energy Policy Act of 2005 to qualify for federal tax credits. At  
19 present, there are no Energy Star minimum ratings for water heaters. To achieve  
20 a .80 EF rating for a residential gas water heater would generally require the  
21 installation of an instantaneous tankless unit, or a highly insulated, power vent  
22 storage tank unit. The .80 EF represents a significant improvement over the  
23 existing minimum Federal furnace standard of .59 EF. The incremental installed

1 cost for an upgrade to a .80 EF water heater in the Company's service area  
2 ranges from approximately \$500 to \$900 (with tankless representing the higher  
3 amount) based on a recent survey of contractors. The proposed cash allowance  
4 amounts of \$300 (new construction) and \$350 (replacement) would, on average  
5 pay for approximately 50% of the upgrade in efficiency. The Company estimates  
6 that less than 2% of the gas water heaters currently installed in new homes or in  
7 the replacement market, in the Company's service area, would meet the .80 EF  
8 requirement.

9 **Q. HOW DOES THE COMPANY PROPOSE TO RECOVER THE COST OF ITS**  
10 **ENERGY CONSERVATION PROGRAMS?**

11 A. The Company is proposing to establish an Energy Conservation Cost Recovery  
12 (ECCR) bill adjustment mechanism. The Company's cost to administer the above  
13 Energy Conservation and Consumer Education Programs, including the  
14 allowance payments provided under each program, would be recoverable from  
15 all consumers receiving Gas Delivery Service under a firm service rate schedule.  
16 The Company would propose to establish an annual filing proceeding with the  
17 Commission, in a manner similar to the Gas Sales Service Rate proceeding, to  
18 determine the ECCR rates for a future annual period. The rates for each  
19 applicable rate class would be based on the recovery of projected costs and a  
20 true-up of any historical over or under collection of costs, All energy conservation  
21 activities, program costs and revenues would be subject to Commission audit.

22 **Q. EARLIER YOU DISCUSSED THE SFV AND RNM AS RATE DESIGNS THAT**  
23 **SUPPORT ENERGY CONSERVATION EFFORTS. ARE THERE OTHER**

**INNOVATIVE RATE DESIGNS THAT COULD ASSIST IN ATTAINING  
DELAWARE'S ENERGY GOALS, FOR EXAMPLE, THE RENEWABLE  
ENERGY OBJECTIVES OUTLINED IN THE SUSTAINABLE ENERGY UTILITY  
REPORT?**

- A. Yes. Chesapeake's Florida Division is currently working with other Florida gas Local Distribution Companies (LDCs) and the Florida Solar Energy Center (FSEC-a state agency) to study the feasibility of installing combination solar and natural gas water heating systems in multi-family residences. Conceptually, the installation would consist of solar water heating equipment with tankless gas water heaters to back-up the production of solar hot water on days where the demand for hot water cannot be met by the solar system. The tankless gas systems are pilotless and would use virtually no energy unless there is a need to supplement the solar hot water production.

In the Company's view, the key to gaining widespread and sustained utility support of renewable energy technologies is to allow an LDC to be a for profit participant in the installation and operation of renewable technologies. Under the current regulatory framework in both Delaware and Florida, a LDC would have little motivation to promote a combination solar/gas tankless water heater system. However, if the LDC were able to own, operate, maintain and earn a return on the investment in such a system, in a manner similar to its other gas facility investments, the LDC would likely be inclined to promote such installations. The LDC would charge a Commission approved rate for the delivery of hot water, not gas. A rate design would need to be adopted that enabled the

1 LDC to sell Btu's not Ccf's. Consumers would benefit from no initial first cost and  
2 would have the assurance that the LDC would have the obligation to maintain the  
3 equipment to provide reliable service. It would be in the LDCs best interest to  
4 keep the solar system operational, since the lowest cost Btu's (excluding initial  
5 cost amortization) would be produced by the solar equipment. The societal  
6 benefits of increased installation of customer-sited renewable energy  
7 technologies is described at length in the SEU report.

8 The use of thermal renewable energy technologies deployed at an end-  
9 user's location (as opposed to alternative energy distribution technologies, e.g.  
10 wind power) has historically, in my view, been hampered by several factors. The  
11 available renewable technologies for residential and small commercial solar  
12 space heating and water heating, for example, typically have higher initial costs  
13 compared to traditional systems. While the life cycle costs for renewable  
14 technologies frequently provide positive overall cost benefits, it is difficult for  
15 consumers to overcome the higher first cost. Most of the renewable energy  
16 (thermal solar) systems require regular levels of maintenance that exceed the  
17 level to which most consumers are willing to commit. Finally, the solar industry, in  
18 many locations, may not be well supported by local vendors. An opportunity to  
19 address these issues, and achieve increased on-site installations of renewable  
20 energy technologies may exist with the Delaware SEU concept. The Company  
21 believes it could play a meaningful role in the expansion of such technologies.